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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/235,531	01/22/1999	KARIN BIEBER	476	4591

7590 01/22/2004

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EXAMINER

CADUGAN, ERICA E

ART UNIT PAPER NUMBER

3722

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/235,531

Applicant(s)

BIEBER ET AL.

Examiner

Erica E Cadugan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text. It is noted that Applicant indicated in the response filed 4/17/2003 that a new abstract was submitted therewith. However, no such abstract could be located.

### ***Response to Previous Amendment***

2. The amendment filed December 20, 2001 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: in the abstract, lines 2-3, Applicant added the following language: "a drive motor for rotatably and strikingly through a striking mechanism driving the drilling spindle". As previously described in the office action mailed September 20, 2001, the specification as originally filed did not provide that the motor both rotated and "strikingly drove" the spindle. As set forth in the disclosure as originally filed, the only teaching provided about the specific percussion mechanism is found on page 9, lines 3-8. Therefore, the specification as originally filed did not provide a teaching that the motor 11 that rotatably drives the spindle 13 (see page 8, lines 2-12) also "strikingly" drives the spindle 13. Note that the specification does provide that an "impact mechanism 28" is used "for delivering axial impacts against the drilling spindle 13" (page 9, lines 4-6), and thus the specification as originally filed

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would support a description of a motor that rotatably drives the spindle and an “impact mechanism” that strikingly drives the spindle.

Applicant is required to cancel the new matter in the reply to this Office Action.

***Claim Rejections - 35 USC § 112***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 16, penultimate line, “the torque transmission from said tool holder in an opposite direction” lacks sufficient antecedent basis as no previous torque transmission “from said tool holder” was set forth in the claim. Examiner suggests changing this instance of “the torque transmission” to --a torque transmission--.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 15-16, 16 is as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 3,021,723 (Happe).

Happe teaches a hand drill including a housing (having at least sections 10, 11, 12), a drilling spindle 20, and a chuck 21 that is threaded to the spindle 20 and thus inherently receives

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a “releasing or tightening moment” during exchanging of the chuck 21. The spindle is driven in rotation via a motor shaft 13 that drives a gear 17 that is mounted on an “intermediate shaft” that is radially offset with respect to both the motor shaft 13 and the spindle 20 (see Figures 1 and 2).

Regarding the claimed “component”, it is noted that any number of members taught by Happe can be so considered as there are many members that are connected with the housing (see Figure 1, e.g., the bearings, the bolt connecting 10, 11, and 12, etc.).

Regarding the “arresting device”, it is noted that Happe teaches a disc 28 that is constructed such that upon manually pressing the plunger 26 to overcome the force of spring 31, the motor shaft 13 is locked against rotation, and it is also noted that Happe specifically teaches that this action is performed so as to “hold the spindle 20 stationary so that the chuck 21 may be unscrewed and a different tool-holding element may be substituted therefor” (col. 2, lines 7-15, also Figures 1 and 4, for example).

Relating Happe’s “arresting device” to the present claim language, Happe’s described arresting device “non-rotatably” couples the “drilling spindle relative to said machine housing” as claimed (see col. 2, lines 7-15 and Figures 1 and 4, for example). Additionally, Happe’s arresting device is spatially located or “arranged between” the intermediate shaft on which gear 17 is located and the housing or any number of components connected to the housing, such as the bearings (see Figure 1, for example). Additionally, note that Happe’s arresting device “opens” during a torque transmission from the drive motor to the tool in one direction via the compression spring 31 (which biases the arresting device to the position where rotation of the spindle is not locked). Furthermore, note that Happe’s arresting device “closes” (via the user of the device pressing the plunger 26 as described above) during a torque transmission from the tool

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holder 21 in an opposite direction (noting that Happe explicitly states that the plunger is pressed to lock the shaft 13 at the time of exchanging the chuck 21 as described above, see col. 2, lines 7-15).

***Claim Rejections - 35 USC § 103***

7. Claims 1-5, 7-12, and 14-18, claim 16 is as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 3,998,278 (Stiltz et al.) in view of U.S. Pat. No. 5,788,021 (Bitter et al.), or in the alternative, are rejected under 35 USC 103(a) as being unpatentable over Stiltz et al. in view of Bitter et al. and U.S. Pat. No. 4,081,704 (Vassos et al.).

Stiltz et al. teaches a percussion drill including a housing (see Figure 1) and a rotating “spindle” 1 that rotates about a horizontal axis as viewed in Figure 1 (see Figure 1, also col. 3, lines 15-24, for example). The “spindle” 1 is driven in rotation via its ultimate connection to motor drive shaft 22 (col. 2, lines 47-51, see also Figure 1, for example). The “spindle” 1 is strikingly driven via an impact mechanism that includes the striking element 10 (see Figure 1, also col. 2, lines 10-37, for example). Additionally, Stiltz et al. teaches an “intermediate shaft” 19 (on which are located gears 18, 20, see col. 2, lines 47-51) that is radially offset from both the “spindle” 1 and the motor drive shaft 22 (see Figure 1). Regarding the claimed “component”, note that as viewed in Figure 1, there are many elements that are “connected with” the housing and that can thus be considered the claimed “component”, e.g., any of the bearings, the member 32, the member 23, etc.

Regarding claim 3, for example, note that Stiltz teaches at least one stage of gears (Stiltz teaches gears 21, 18, 20, and 3, for example, see Figure 1).

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Regarding claim 4, for example, while Stiltz et al. does not specifically describe the transmission ratio, note that the input gear 18 of the intermediate shaft is of a smaller diameter than the output gear 3 (drivingly connected thereto) of the “spindle”, and thus the output speed is slower than the input speed from the intermediate shaft 19 to the “spindle” 1.

Regarding the tool holder, note that Stiltz specifically teaches that a tool bit is to be attached to the forward end of the “spindle” 1 by, for example, a chuck (see col. 2, line 37 through col. 3, line 1). Additionally, note that as shown in Figure 1, the forward end (left as viewed in Figure 1) of the “spindle” 1 terminates in a thread. Thus, it is considered inherent that any chuck that is attached to the forward threaded end of the “spindle” 1 will receive a “releasing or tightening moment” as it is screwed or unscrewed from the threaded connection shown in Figure 1.

Stiltz et al. does not teach an arresting device.

Tsai teaches an automatic output shaft locking mechanism for an electric tool such as a drill or a striking tool (column 1, lines 7-23). Tsai’s device utilizes a retaining ring 50, which constitutes a “disc”. The “disc” 50 has a plurality of radial projections 502 (Figure 2), which project outwardly from center hole 501 (see Figure 1). The center hole 501 constitutes a bearing seat which couples disc 50 to shaft 60. Tsai also teaches the use of a “claw coupling” 20 which has a plurality of axially extending claws 203 (see Figure 1). Tsai teaches that a motor output shaft is divided into an inner shaft 10 and an outer shaft 60 (column 2, lines 35-38 and Figure 1). When a torque is applied to the inner or **motor** shaft 10 (e.g., via the motor), the outer or output shaft 60 rotates (column 3, lines 28-35, and Figures 3 and 4). When a torque is applied to the output shaft 60 (e.g., manually), the disc 50 is locked in position (column 3, lines 35-60 and

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Figures 5 and 6) such that a chuck or a drill bit can be speedily and conveniently replaced (column 3, lines 60-64). Note that Tsai specifically teaches that the motor in such electric tools “drives a rotary shaft to drive directly **or via a speed change mechanism** a driven component at the front end of the drill for drilling purposes” (col. 1, lines 26-55, for example, and specifically lines 28-30). In other words, Tsai teaches that the device is used with motors that indirectly, such as “via a speed change mechanism”, drive a tool.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have added the automatic output shaft locking mechanism taught by Tsai to the drill taught by Stiltz et al. via a substitution of the motor output shaft (including portions 10 and 60) and automatic locking mechanism taught by Tsai for the motor output shaft portion 22 of the motor shaft taught by Stiltz et al., such that Tsai’s motor output shaft that is “divided” into an inner 10 and outer shaft 60 separated by the arresting mechanism including disc 50 and “claw coupling” 20 (see Figure 1 of Tsai) replaces the shaft portion of the motor shaft 22 taught by Stiltz et al., noting that in such a configuration, the inner shaft 10 taught by Tsai would be connected to the motor and the outer shaft 60 taught by Tsai would to the left side of the replaced shaft portion as viewed in Figure 2 of Stiltz, (thus positioning the locking mechanism at an “end side” of a “toothed gear” or pinion stub 21 of the stage taught by Stiltz et al.), for the purpose of allowing drill bits to be speedily and conveniently removed or replaced (Tsai, column 3, lines 60-64, for example).

Regarding the tool holder, in the alternative, note that Vassos et al. provides an explicit example of a drill chuck 21 “of conventional design” (col. 2, lines 34-35), wherein the drill chuck 21 is threadedly affixed to a threaded stud 80 (Figure 3, also col. 3, lines 66-68). Again,



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note that such a connection inherently receives a moment as the chuck is attached or disconnected from the threaded connection (see Figure 3).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the specific chuck 21 having a threaded bore taught by Vassos to the threaded stud taught by Stiltz et al. for the purpose of providing a conventional (as described by Vassos) and thus one whose strengths and weaknesses are known means to hold the tool taught by Stiltz.

8. Claims 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stiltz et al. in view of Tsai, or alternatively, over Stiltz et al. in view of Tsai and Vassos et al. as applied to claims 1, 2, 5, 8, 9, and 12 above, and further in view of U.S. Pat. No. 3,030,818 (Zagar).

Stiltz et al. in view of Tsai, or alternatively, Stiltz et al. in view of Tsai and Vassos et al. teaches all aspects of the claimed invention as described in the above rejection based thereon, but does not teach that the shaft 22 has a non-cylindrical cross section.

Zagar teaches the use of a gear 21, which is a driven disc. The gear 21 is mounted on a polygonal portion of a shaft 27 (Figures 1 and 3). The polygonally-mounted portion acts as a key coupling (column 1, lines 18-21).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilized a polygonal shaft as taught by Zagar for the motor shaft taught by Stiltz et al. in view of Tsai or Stiltz et al. in view of Tsai and Vassos et al. such that the portion of the shaft that held the disc was polygonally-shaped for the purpose of providing a built-in key between the disc and the shaft, thus preventing slippage between the disc and the shaft.

***Response to Arguments***

9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Faxing of Responses to Office Actions and Contact Information***

10. In order to reduce pendency and avoid potential delays, TC 3700 is encouraging FAXing of responses to Office Actions directly into the Group at (703) 872-9306. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into TC 3700 will be promptly forwarded to the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica Cadugan whose telephone number is (703) 308-6395. The examiner can normally be reached on Monday through Thursday from 7:30 a.m. to 5:00 p.m., and every other Friday from 7:30 a.m. to 4:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington can be reached at (703) 308-2159. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 3700 receptionist whose telephone number is (703) 308-1148.

  
Erica E Cadugan  
Patent Examiner  
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